

Protocol for Using On-line Continuous Recording Turbidimeters for Turbidity Compliance

KENTUCKY DIVISION OF WATER DRINKING WATER BRANCH

General:

1. The turbidimeter must be capable of recording turbidity at least every 15 minutes.
2. If there is a failure of the continuous recording device, grab sampling every 4 hours may be conducted in lieu of continuous monitoring but for no more than 5 working days following failure of the unit.
3. Data must be retained for 3 years.
4. Develop, and revise when necessary, Standard Operating Procedures (SOP) for:
 - a. Cleaning turbidimeters.
 - b. Calibrating turbidimeters.
 - Standard preparation.
 - Calibration procedure and records.
 - Frequency of calibration.
 - Quality control/quality assurance information.
 - c. Maintenance (preventive and emergency) on turbidimeters.
 - d. Calibrating recording devices.
 - e. Maintenance (preventive and emergency) on recording devices.
5. Submit to the Division of Water to the attention of the Drinking Water Branch, a schedule of times when the 4-hour turbidity monitoring will be recorded. Also submit a certification stating the accuracy of the continuous turbidimeters based on the calibration information listed below.

Installation:

1. Install according to manufacturer's recommendations.
2. Avoid passing air bubbles through the unit.
3. Ensure that the sample tap is representative of the combined filter effluent.
4. Gravity flow to the unit is preferred over pumping.
5. Minimize the length of conduit from the tap to the unit; consider the required sample flow and pressure.
6. If necessary, install a flushing line or port on the sample line.
7. Have the unit easily accessible for maintenance and calibration.
8. Don't hard-pipe the drain.

Preventive and Routine Maintenance:

1. Establish a cleaning frequency based on raw water quality.
2. Calibrate according to the manufacturer's procedure.
3. Calibration shall be verified weekly if using the instrument for compliance purposes; verification can be done using primary or secondary standards or compared to a properly calibrated on-line unit.
4. If $\geq 10\%$ deviation from a standard, recalibrate the unit using a primary standard
5. Regardless of calibration results, the units should be calibrated at least quarterly with primary standards.
6. It is not recommended that on-line units be compared to bench units.
7. Record all calibration data.